

REMARKS/ARGUMENTS

This is a submission accompanying an RCE and serves as a response to the Advisory Actions issued June 7, 2006 and July 5, 2006, and the Final Office Action of January 19, 2006 in connection with the above-identified application. Reconsideration of the application is respectfully requested. A Petition for Extension of Time (three months) and the fee therefor are enclosed.

As amended, the application contains previously presented claims 3-8 and newly presented claims 9-20.

The Office Action asserts that claims 1-5, 7 and 8 are anticipated by Kajino, et. al. (6,793,769). It is further contended that claims 1-5, 7 and 8 are anticipated by Adachi Hideki (JP 11-087294). Still further, claim 6 is rejected on grounds of obviousness over Adachi Hideki in view of Tsuchiya, et. al. (6,810,888). Independently of the foregoing, claims 1-8 are rejected for obviousness-type double patenting as being unpatentable over claims 1-36 of co-pending application number 10/659,213.

As noted, in the response to the Final Rejection, reconsideration is being requested in view of the cancellation of claims 1 and 2 and the rendering of claim 3 in independent form. Further, a Terminal Disclaimer previously submitted obviates the double patenting rejection.

As described in independent claim 3 and in each of the independent claims added by the present Amendment, three structural elements of the apparatus distinguish the same over the prior art.

Preliminarily, the Examiner's kind attention is drawn to Fig. 4, which shows at the right hand side thereof the spin base 10, and juxtaposed above it, is the cutoff plate. The substrate is typically disposed between these two elements which have a spacing of "D1" between them.

Before proceeding further, the Examiner's attention is further directed to Fig. 5 which is described as the "background art." It is immediately apparent that the cutoff plate in the "background art" is, as it typically was in the prior art, quite thin as compared to the thickness of the cutoff plate in Fig. 4.

This feature which is based on the thickness of the cutoff plate imbues the apparatus in each of the independent claims with three specific structural features or elements. These include:

- a) the vertical spacing D3 of the opening of the splash guards being greater than the distance D1 between the spin base and the atmosphere cutoff plate;
- b) the top surface 51a of the splash guard being lower than the top surface 30a of the atmosphere cutoff plate; and
- c) the lower surface 52b of the splash guard being higher than the lower surface 10b of the spin base.

In order to prevent backflow to the space where the substrate is processed, it is advantageous to have the opening distance (distance D1 between the spin base and the atmosphere cutoff plate) comparatively narrower. Namely, it is preferred to have the structure shown in a), as seen in the cited references.

But as noted earlier above, the conventional wisdom and the knowledge of the ordinary artisan in this art is to provide the cutoff plate in a form whereby it is made of a thin material. Similar conventional wisdom is applied to the spin base as well.

With that in mind, it would not be possible for the prior structures to achieve the features and elements recited in the independent claims of the present application with such atmosphere cutoff plate and a spin base made of a thin material.

Consider please the desire to incorporate the feature a) noted above. The adoption of such a feature negates the possibility of adopting the structure according to features b) and c) noted above, when a prior art style cutoff plate is used. Likewise, selecting the features according to the structures b) and c) is contradictory to the selection of the feature a). Applicant respectfully asserts that what is inventive here and what is represented in the claims is not merely a matter of a preferred design, or a mere possibility that would have occurred to one of ordinary skill in the art. To the contrary, the three features recited in the instant claims are, according to conventional knowledge, inconsistent with one another. Their combination is not obvious.

But as described in the instant specification, when the spin base and the atmosphere cutoff plate rotate, strong airflows S1 and S2 are generated along the lower surface 10b of the spin base and the top surface 30a of the atmosphere cutoff plate. When the airflows S1 and S2 are led to the recovery duct 54 which actually collects solution, the airflow S1 collides with the splash guard 51 and the airflow S2 collides with the splash guard 52, respectively, which generates a crosscurrent. At the same time, tip portions of the splash guards 51 and 52, where airflows S1 and S2 exist, mainly collide, are adjacent to the spin base 10 and the atmosphere

cutoff plate 30. As a result, the crosscurrent is generated near the substrate which negatively impacts the substrate processing.

By including the structures b) and c), the overall structure defined in the instant claims prevents the generation of crosscurrents by the airflows S1 and S2, in proximity to the substrate and eliminates the negative impact on substrate processing.

In marked contrast, the cited references disclose the same structure a) as the present application in dealing with the airflow from the space where the substrate is processed. However, the cited references do not disclose the structures b) and c) for the purpose of dealing with the airflows S1 and S2. Therefore, the present claims clearly distinguish from the cited references.

The Office Action asserts (and applicants agree) that the level of a guiding member can be adjusted in the cited references. Therefore, it would be possible to obtain the structure or the feature indicated above by b), by focusing on only b) and adjusting its level. However, when adjusting the level of the guiding member in the cited reference to have the structure identified here as b), it is impossible to have the structure shown in a) at the same time, since the atmospheric cutoff plate in the prior art is too thin for that purpose.

In one of the Advisory Actions, the Examiner indicates that the features of the structure b) are inherently capable of being met by either Kajino et al. or Hideki. Applicants respectfully traverse that assertion, as it does not logically flow from the actual teachings of the prior art.

The Advisory Action further asserts that, since the height of the guide member is adjustable, setting the height not higher than the level of a top surface of the atmospheric cutoff plate is a matter of an “intended use.” Applicants again respectfully disagree and traverse this assertion. The specification shows the substantial advantages that ensue from combining the features as set forth in the claims, given applicants’ discovery that the structure shown in b) is realized as a solution to prevent a generation of crosscurrents by airflows S1 and S2. This cannot be characterized as a mere matter of “intended use.”

Of course the dependent claims include all the limitations of their base claims and impose further limitations thereon. As such, they too are submitted to be patentable.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended, and pass this case to issue.

EXPRESS MAIL CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail to Addressee (mail label #EV606197608US) in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 19, 2006

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